CLAIMS

1. Process for the production of a biocompatible crosslinked gel comprising the steps:

of starting crosslinking of a predetermined quantity of at least one biocompatible polymer in solution by the addition of a quantity of crosslinking agent,

of crosslinking said quantity of polymer,

of adding a supplemental quantity of polymer of a molecular weight higher than 500,000 Da in solution with dilution of the reaction mixture so as to decrease the overall concentration of the polymer in solution, and of crosslinking, and

stopping the crosslinking reaction by elimination of the crosslinking agent.

2. Process according to claim 1, characterized in that the step of starting crosslinking is carried out in a basic medium.

3. Process according to claim 1, characterized in that the step of starting crosslinking is carried out in an acid medium.

4. Process according to one of claims 1 to 3, characterized in that a supplemental quantity of crosslinking agent is added during the step of adding a supplemental quantity of polymer.

5. Process according to one of claims 1 to 4, characterized in that the step of stopping crosslinking is carried out by dialysis.

6. Process according to one of claims 1 to 5, characterized in that the polymers are of natural origin.

7. Process according to claim 6, characterized in that the polymers of natural origin are compounds selected from the group consisting of: hyaluronic acid, chondroitine sulfate, keratan, keratan sulfate, heparin, heparin sulfate, cellulose and its derivatives, alginates, xanthane, carraghenin, proteins or nucleic acids.

8. Process according to claim 6, characterized in that at least one polymer of natural origin is a polymer not naturally present in the human body, selected from the group consisting of: cellulose and its derivatives, alginates, xanthane, carraghenin, a polymer which is crosslinked with at least one polymer naturally present in the human body selected from the group consisting of: hyaluronic acid, chondroitine sulfate, keratan, keratan sulfate, heparin, heparin sulfate, proteins or nucleic acids.

9. Process according to one of claims 1 to 8, characterized in that the crosslinking agent is a bi- or polyfunctional molecule selected from the components of the group consisting of epoxys, epihalohydrins and divinylsulfone.

10. Gel prepared by the process according to one of claims 1 to 9.

11. Gel according to claim 10, characterized in that it constitutes a gel comprising at least one dispersed active ingredient.

12. The use of a gel according to claim 10 or 11, to separate, replace or fill a biological tissue or increase the volume of said tissue or else to supplement or replace a biological fluid.